

AMENDMENTS TO THE CLAIMS

The following listing of claims replaces all prior versions and listings of claims in this application. In the changes made to the claims by the current amendment, ~~deletions are shown by strikethrough~~, and additions are underlined.

LISTING OF CLAIMS

Claims 1-2 cancelled

3. (Original) A method for controlling fluid flow to and from an eye during ophthalmic surgery, said method composing the steps of:

introducing irrigation fluid into an eye;

determining initial irrigation fluid pressure;

adjusting maximum vacuum setting based on the determined initial irrigation fluid pressure;

continuously determining irrigation fluid pressure after the initial determination;

and

continuously adjusting maximum vacuum setting based on the continuous determination of irrigation fluid pressure.

4. (Cancelled)

5. (Previously Presented) The method according to claim 3 where the step of initially determining irrigation fluid pressure and continuously measuring irrigation fluid pressure includes determining in-line irrigation pressure.

Claims 6-22 cancelled

23. (Previously Presented) The method according to claim 3 further comprising the step of using a change in irrigation fluid pressure to provide an indication of wound leaking.

24. (New) A phacoemulsification system comprising:

a handpiece having an aspiration inlet and an irrigation outlet;

an irrigation source operatively coupled to the irrigation outlet of the handpiece via an irrigation line;

a fluid pressure sensor operatively coupled to the irrigation line;

an aspiration system operatively coupled to the aspiration inlet of the handpiece via an aspiration line; and

a computer control system operatively coupled to the aspiration system and the fluid pressure sensor, wherein the computer control system includes a computer readable medium having a set of instructions, which when executed by a processor, causes said processor to execute a process comprising:

continuously determining irrigation fluid pressure from the fluid pressure sensor; and

continuously adjusting maximum vacuum setting of the aspiration system based on the continuous determination of irrigation fluid pressure.

25. (New) The phacoemulsification system of claim 24, wherein the aspiration system includes a vacuum-based pump.

26. (New) The phacoemulsification system of claim 24, wherein the irrigation source includes a positive displacement pump.

27. (New) The phacoemulsification system of claim 24, wherein the handpiece further includes a hollow, ultrasonically drivable needle.

28. (New) The phacoemulsification system of claim 24, wherein the fluid pressure sensor includes a pressure transducer.